

ELECTRICALLY CONDUCTING ADHESIVES FOR VIA FILL APPLICATIONS

ABSTRACT

Electrically conducting adhesives having a broader selectable range of properties are provided by having random sizes of micrometer diameter range particles coated with a low melting temperature metal. The coated particles are suspended in a vehicle of a mixture of thermosetting resins together with a flux resin selected for viscosity and low shrinkage, for screen printability, for electrical and for mechanical properties over a broad range of specification conditions. The vehicle or resin system includes thermosetting cyclo-aliphatic epoxy, thermosetting phenoxy polymer and thermosetting mono-functional limonene oxide. The low temperature melting coating system for the particles includes In, Sn, and alloys such as In-Sn, Sn-Pb, Bi-Sn-In and InAg. The micrometer diameter range particles includes Cu, Ni, Co, Ag, Pd, Pt, polymer and ceramic.